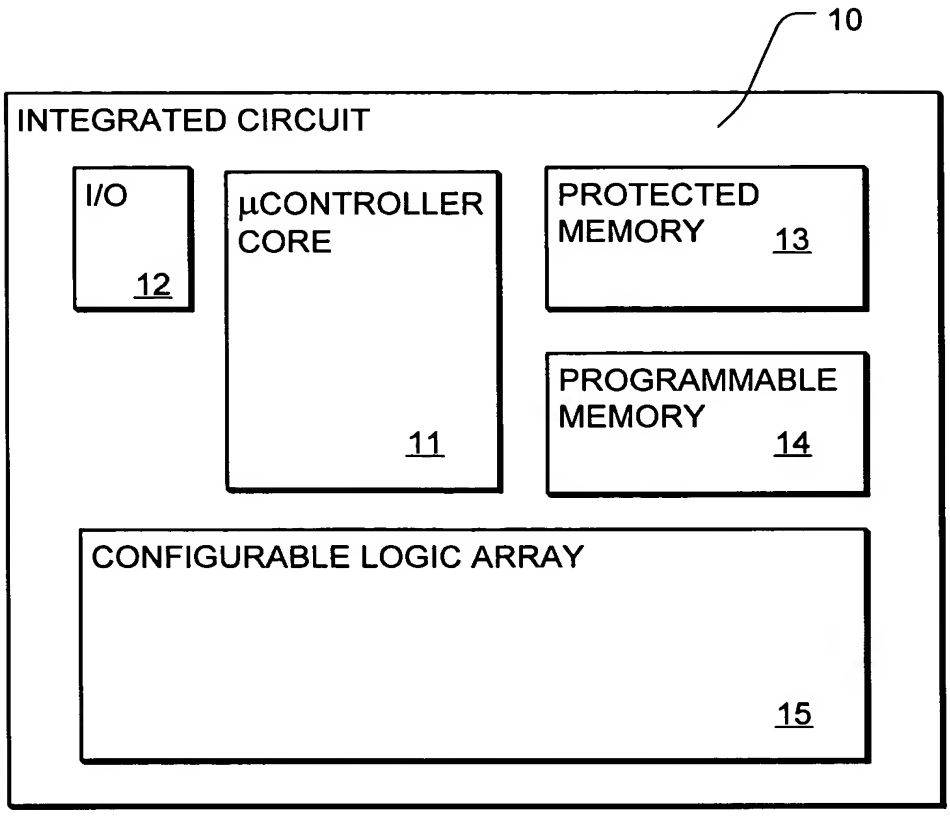
10
INTEGRATED CIRCUIT
I/O
12
µCONTROLLER CORE
11
PROTECTED MEMORY
13
PROGRAMMABLE MEMORY
14
CONFIGURABLE LOGIC ARRAY
15

FIG. 1

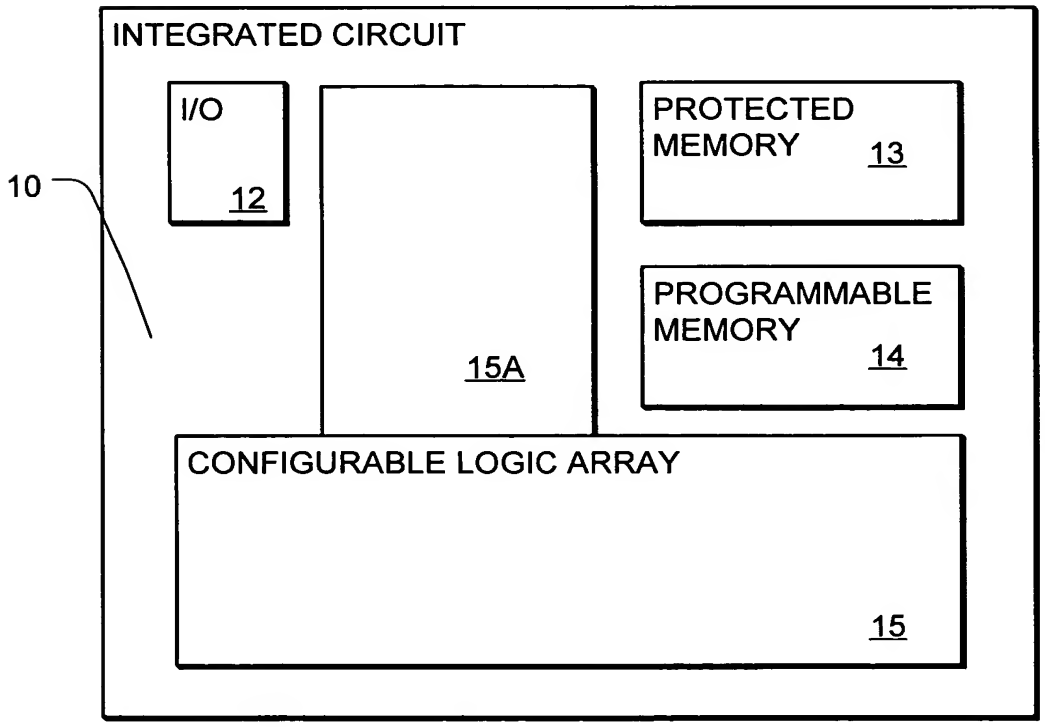
INTEGRATED CIRCUIT
10
I/O
12
15A
PROTECTED MEMORY
13
PROGRAMMABLE MEMORY
14
CONFIGURABLE LOGIC ARRAY
15

FIG. 2

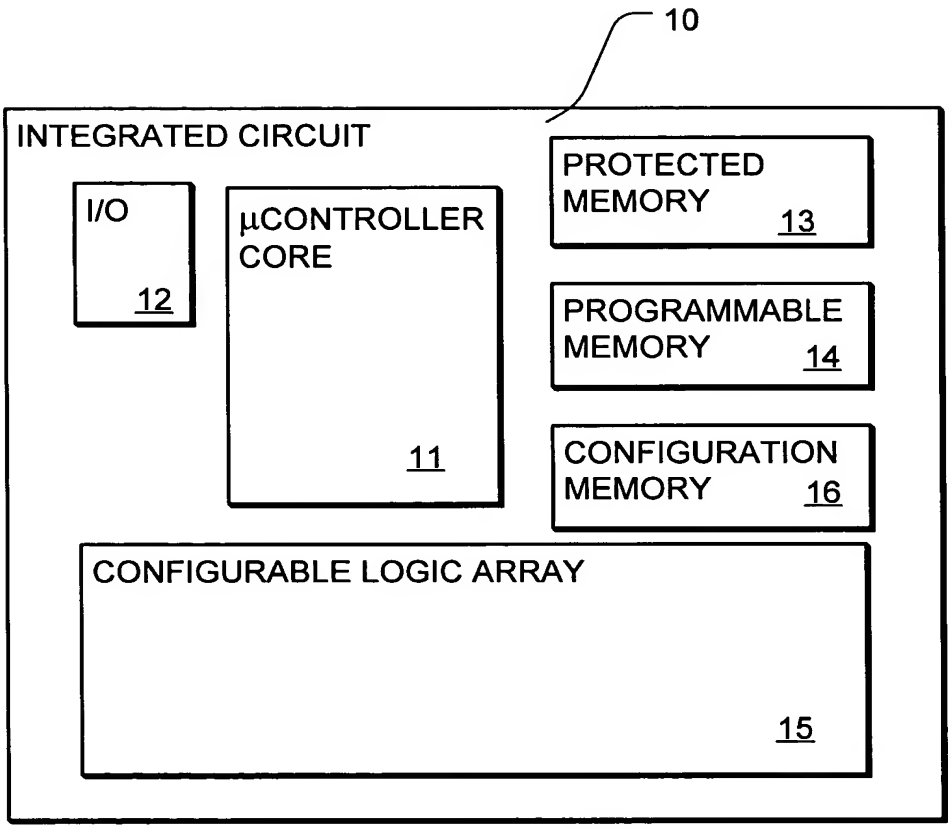
10
INTEGRATED CIRCUIT
I/O
12
µCONTROLLER CORE
11
PROTECTED MEMORY
13
PROGRAMMABLE MEMORY
14
CONFIGURATION MEMORY
16
CONFIGURABLE LOGIC ARRAY
15

FIG. 3

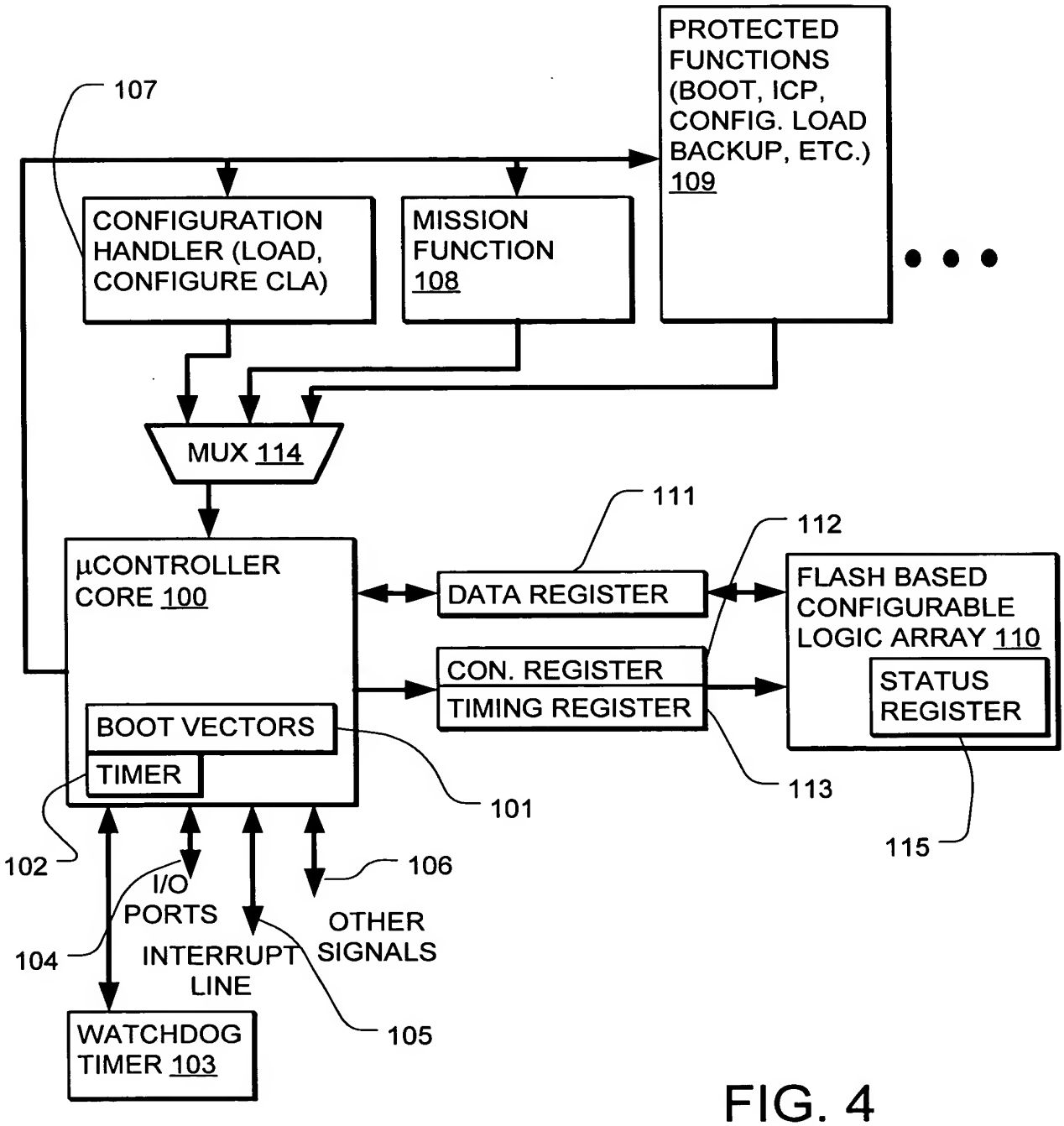
PROTECTED FUNCTIONS (BOOT, ICP, CONFIG. LOAD BACKUP, ETC.) 109
107
CONFIGURATION HANDLER (LOAD, CONFIGURE CLA)
MISSION FUNCTION 108
MUX 114
111
112
µCONTROLLER CORE 100
DATA REGISTER
FLASH BASED CONFIGURABLE LOGIC ARRAY 110
CON. REGISTER
TIMING REGISTER
STATUS REGISTER
BOOT VECTORS
TIMER
101
113
115
102
106
I/O PORTS
OTHER SIGNALS
104
INTERRUPT LINE
105
WATCHDOG TIMER 103

FIG. 4

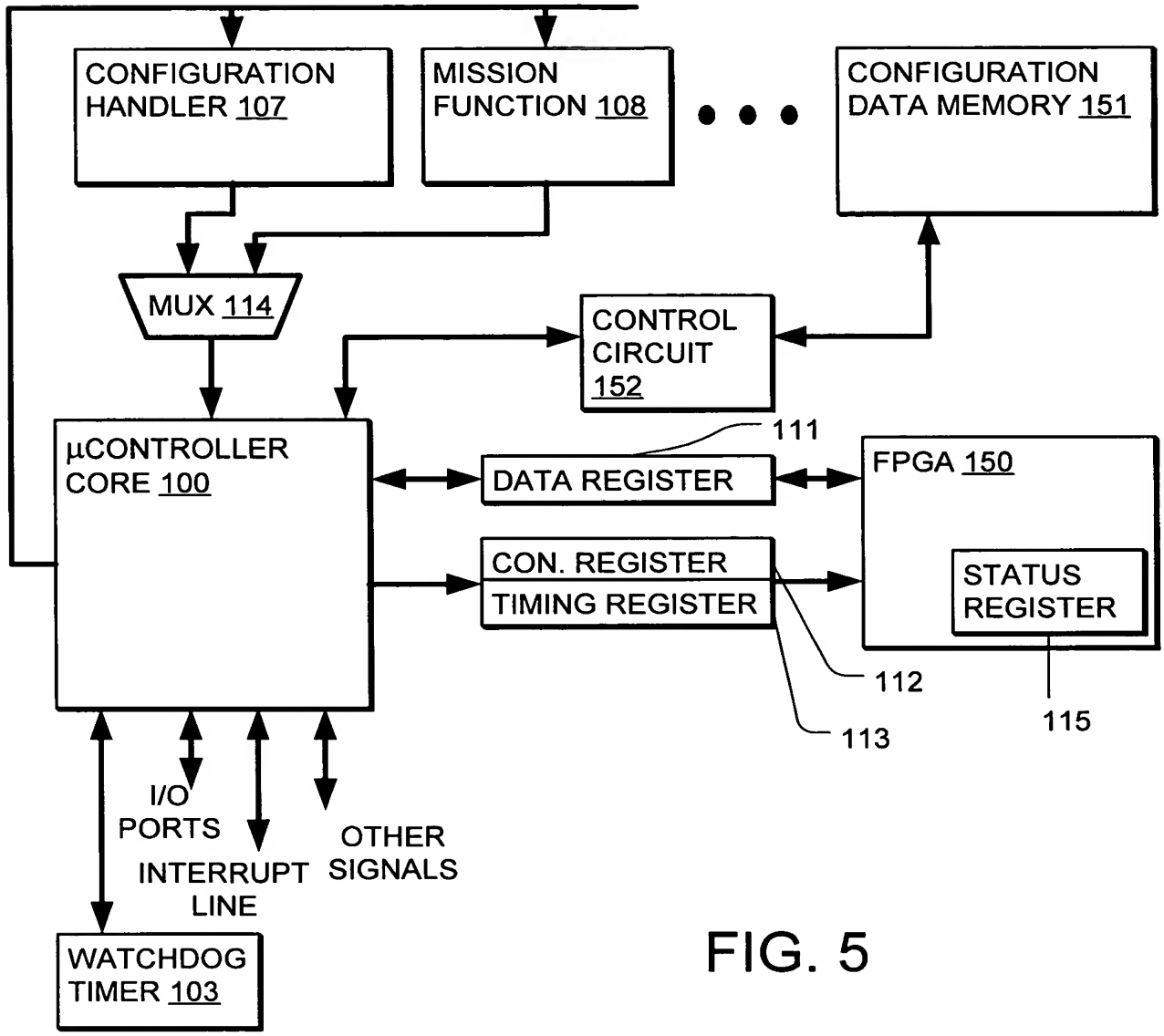
CONFIGURATION HANDLER 107
MISSION FUNCTION 108
CONFIGURATION DATA MEMORY 151
MUX 114
CONTROL CIRCUIT 152
µCONTROLLER CORE 100
111
DATA REGISTER
FPGA 150
CON. REGISTER
TIMING REGISTER
STATUS REGISTER
112
113
115
I/O PORTS
INTERRUPT LINE
OTHER SIGNALS
WATCHDOG TIMER 103

FIG. 5

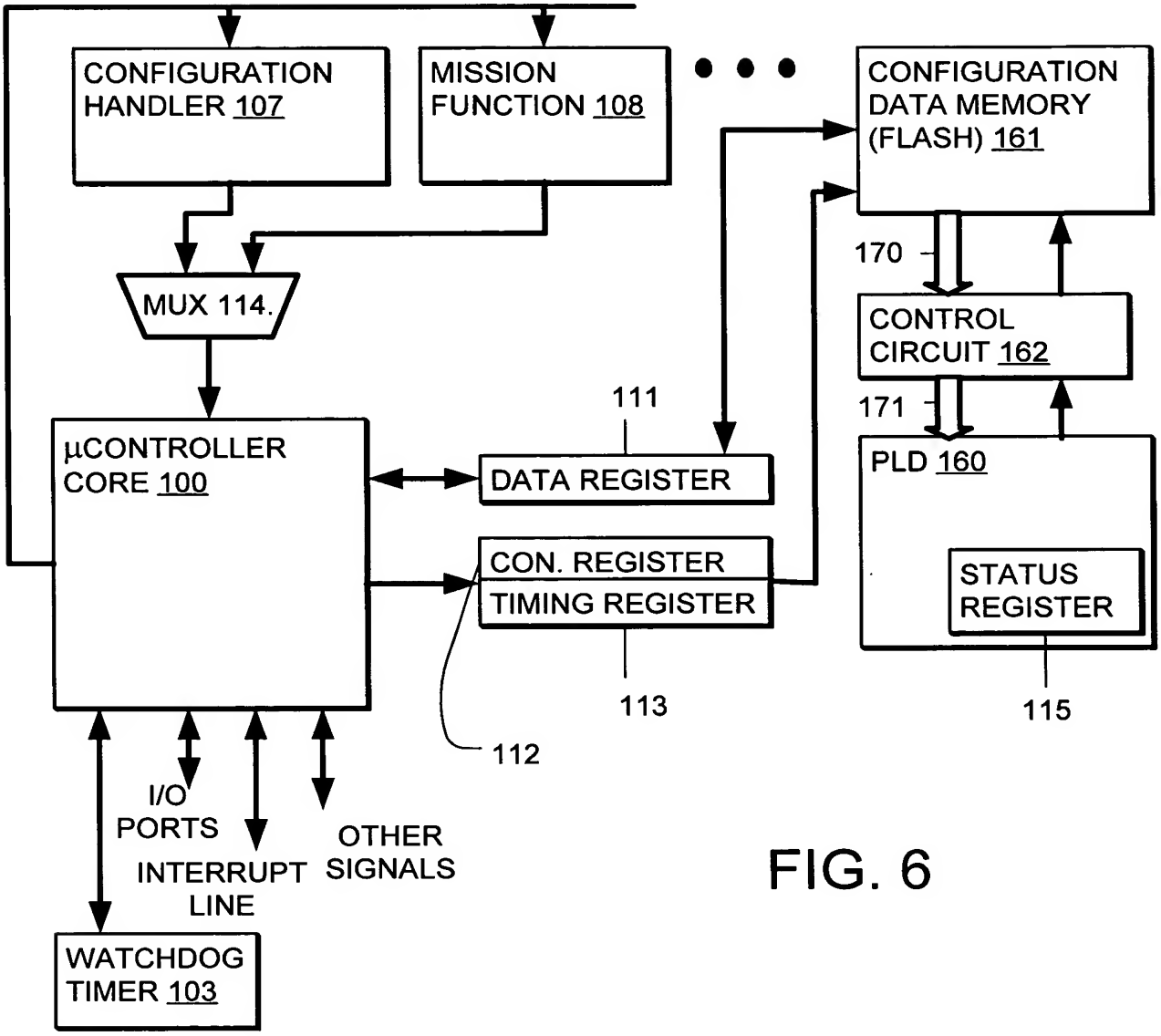
CONFIGURATION HANDLER 107
MISSION FUNCTION 108
CONFIGURATION DATA MEMORY (FLASH) 161
170
MUX 114
CONTROL CIRCUIT 162
171
111
µCONTROLLER CORE 100
DATA REGISTER
PLD 160
CON. REGISTER
TIMING REGISTER
STATUS REGISTER
113
115
112
I/O PORTS
INTERRUPT LINE
OTHER SIGNALS
WATCHDOG TIMER 103

FIG. 6

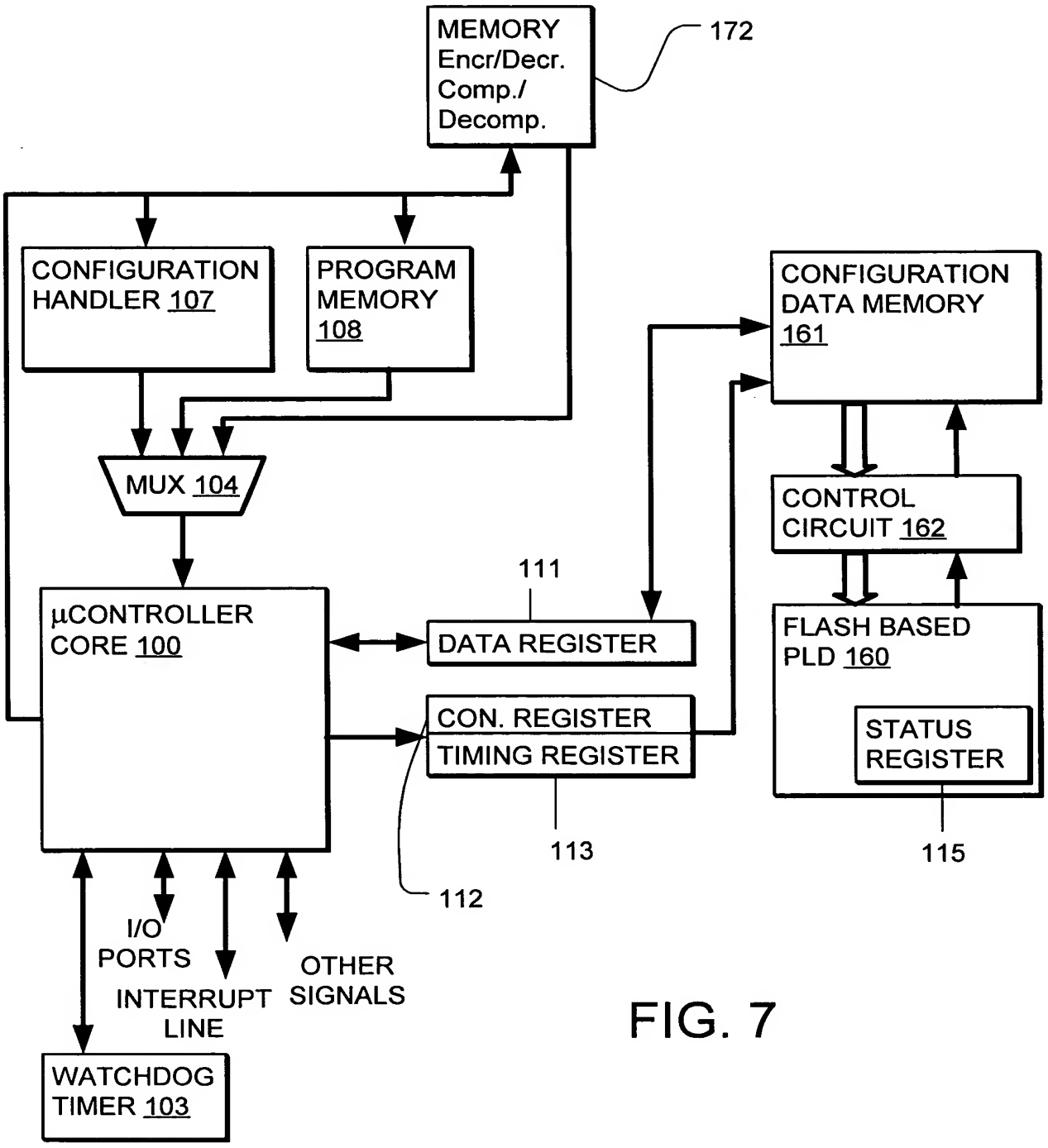
MEMORY
Encr/Decr.
Comp./
Decomp.
172
CONFIGURATION
HANDLER 107
PROGRAM
MEMORY
108
CONFIGURATION
DATA MEMORY
161
MUX 104
CONTROL
CIRCUIT 162
111
µCONTROLLER
CORE 100
DATA REGISTER
FLASH BASED
PLD 160
CON. REGISTER
TIMING REGISTER
STATUS
REGISTER
113
115
112
I/O
PORTS
INTERRUPT
LINE
OTHER
SIGNALS
WATCHDOG
TIMER 103

FIG. 7

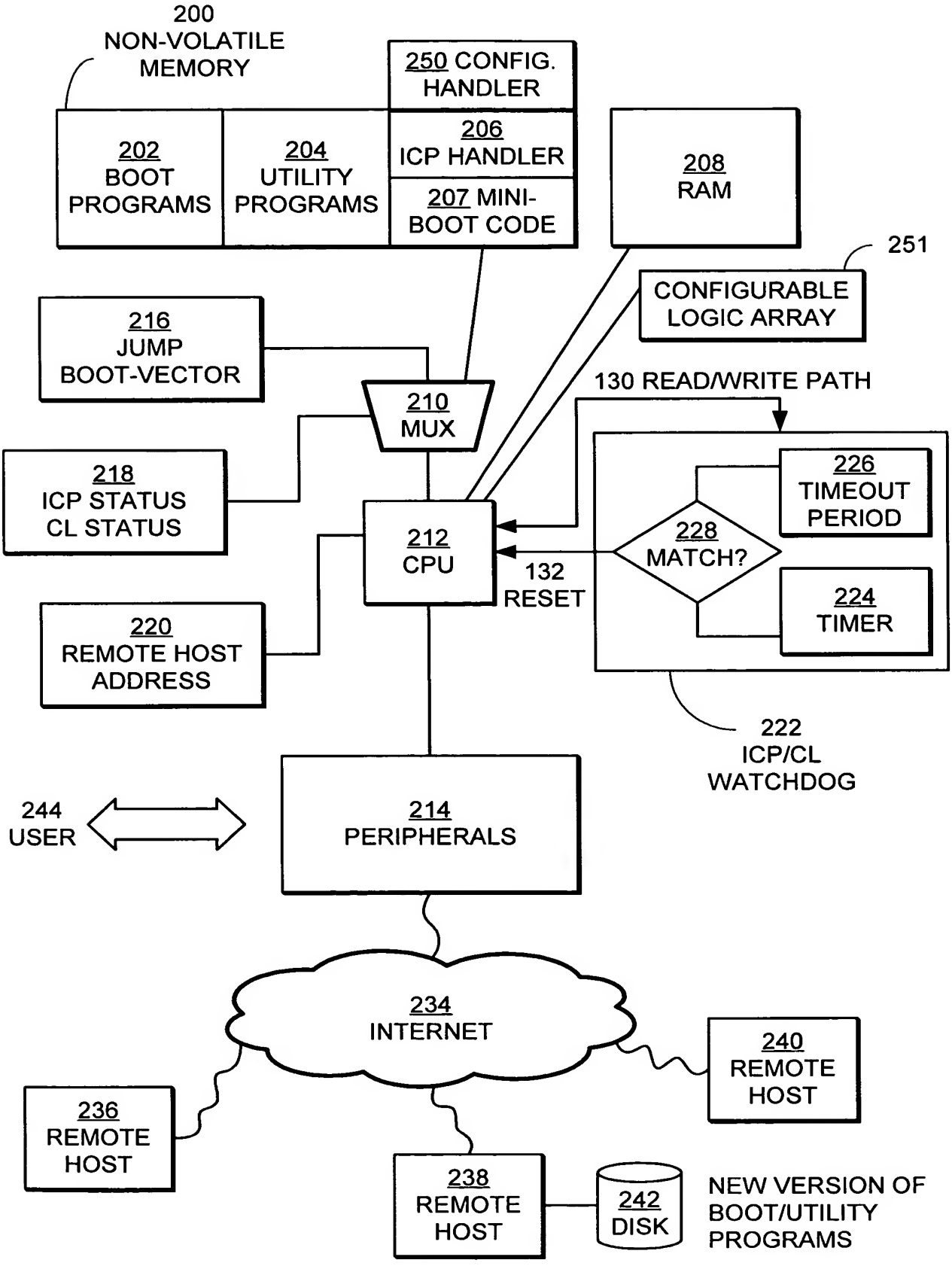
200
NON-VOLATILE
MEMORY
250 CONFIG.
HANDLER
202
BOOT
PROGRAMS
204
UTILITY
PROGRAMS
206
ICP HANDLER
207 MINI-
BOOT CODE
208
RAM
251
CONFIGURABLE
LOGIC ARRAY
216
JUMP
BOOT-VECTOR
130 READ/WRITE PATH
210
MUX
218
ICP STATUS
CL STATUS
226
TIMEOUT
PERIOD
228
MATCH?
212
CPU
132
RESET
224
TIMER
220
REMOTE HOST
ADDRESS
222
ICP/CL
WATCHDOG
244
USER
214
PERIPHERALS
234
INTERNET
240
REMOTE
HOST
236
REMOTE
HOST
238
REMOTE
HOST
242
DISK
NEW VERSION OF
BOOT/UTILITY
PROGRAMS

FIG. 8